What is claimed is:

1.   A method for generating pixels for a display device, the method comprising:

   receiving graphics data;

   rendering a first plurality of samples for a frame in response to said graphics data;

5   filtering said first plurality of samples using a first filter to generate a first set of output pixels for said frame;

   computing a first negativity value based on said first set of output pixels, wherein said first negativity value measures an amount of negativity in said frame; and

   adjusting said first filter in response to said first negativity value.

10   2.   The method of claim 1, wherein said adjusting said first filter is performed in response to a magnitude of the first negative value exceeding a negativity threshold.

3.   The method of claim 2, wherein said negativity threshold is adjustable by a user.

4.   The method of claim 1, wherein said computing the first negativity value comprises:

15   identifying negative pixels at least a subset of said first set of output pixels, wherein negative pixels are output pixels having one or more negative pixel components;

   computing a pixel negativity value for each negative pixel in said at least a subset;

   operating on the pixel negativity values to determine the first negativity value.

20   5.   The method of claim 4 wherein said operating comprises summing the pixel negativity values to obtain the first negativity value.

6.   The method of claim 4 wherein said operating comprises computing a statistic on the pixel negativity values.

7.   The method of claim 1, wherein said filtering comprises (a) filtering a first attribute of said first plurality of samples with the first filter to generate a first component of the output pixels of the first set, and (b) filtering a second attribute of said first plurality of samples with a second filter to generate a second component of the output pixels of the first set;

wherein the first negativity value is based on the first component of the first set of output pixels;

the method further comprising:

computing a second negativity value based on the second component of the output pixels of the first set; and

adjusting the second filter in response to said second negativity value.

8.   The method of claim 7, where the first attribute and second attribute are selected from the group consisting of red, green, blue, and alpha.

9.   The method of claim 1, further comprising:

rendering a second plurality of samples for a next frame in response to additional graphics data; and

filtering said second plurality of samples using said adjusted filter.

10.   The method of claim 1, wherein said computing said negativity value comprises:

computing pixel negativity values for output pixels of the first set having one or more negative components;

forming a histogram of said pixel negativity values; and

computing a statistic based on the histogram cell values.

11. The method of claim 10, wherein said histogram has cell boundaries which occur at successive powers of two.

12. The method of claim 10, wherein said statistic comprises a weighted average of the histogram cell values.

13. The method of claim 1, wherein said adjusting comprises selecting a new filter comprising less negative lobe energy than said first filter.

14. The method of claim 1, wherein said adjusting comprises changing parameters of the first filter within a parameterized family of filters in a direction of decreasing negative lobe energy.

15. The method of claim 1 further comprising transmitting the first set of output pixels to a display device.

16. A computer-readable memory medium comprising a plurality of instructions, wherein the instructions are configured to:

receive graphics data;

render a first plurality of samples for a frame in response to said graphics data;

filter said first plurality of samples using a first filter to generate a first set of output pixels for said frame;

compute a first negativity value based on said first set of output pixels, wherein said first negativity value measures an amount of negativity in said frame; and

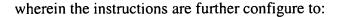adjust said first filter in response to said first negativity value.

17. The memory medium of claim 16, wherein said adjusting said first filter is performed in response to a magnitude of the first negative value exceeding a negativity threshold.

18. The memory medium of claim 17, wherein said negativity threshold is adjustable by a user.

19. The memory medium of claim 16, wherein said computing the first negativity value comprises:

identifying negative pixels at least a subset of said first set of output pixels, wherein negative pixels are output pixels having one or more negative pixel components;

computing a pixel negativity value for each negative pixel in said at least a subset;

operating on the pixel negativity values to determine the first negativity value.

20. The memory medium of claim 19 wherein said operating comprises summing the pixel negativity values to obtain the first negativity value.

21. The memory medium of claim 19 wherein said operating comprises computing a statistic on the pixel negativity values.

22. The memory medium of claim 16, wherein said filtering comprises (a) filtering a first attribute of said first plurality of samples with the first filter to generate a first component of the output pixels of the first set, and (b) filtering a second attribute of said first plurality of samples with a second filter to generate a second component of the output pixels of the first set;

wherein the first negativity value is based on the first component of the first set of output pixels;

wherein the instructions are further configure to:

compute a second negativity value based on the second component of the output pixels of the first set; and

adjust the second filter in response to said second negativity value.

5   23. The memory medium of claim 22, where the first attribute and second attribute are selected from the group consisting of red, green, blue, and alpha.

24. The memory medium of claim 16, wherein the instructions are further configured to:

render a second plurality of samples for a next frame in response to additional graphics data; and

10   filter said second plurality of samples using said adjusted filter.

25. The memory medium of claim 16, wherein said computing said negativity value comprises:

computing pixel negativity values for output pixels of the first set having one or more negative components;

15   forming a histogram of said pixel negativity values; and

computing a statistic based on the histogram cell values.

26. The memory medium of claim 25, wherein said histogram has cell boundaries which occur at successive powers of two.

27. The memory medium of claim 25, wherein said statistic comprises a weighted
20   average of the histogram cell values.

28. The memory medium of claim 16, wherein said adjusting comprises selecting a new filter comprising less negative lobe energy than said first filter.

29. The memory medium of claim 16, wherein said adjusting comprises changing parameters of the first filter within a parameterized family of filters in a direction of decreasing negative lobe energy.

30. The memory medium of claim 16 wherein the instructions are further configured to transmit the first set of output pixels to a display device.

31. A graphics system comprising:

a rendering unit operable to receive a graphics data stream, wherein said rendering unit is operable to render samples in response to said graphics data stream;

a sample buffer coupled to said rendering unit, wherein said sample buffer is operable to store said samples; and

a sample-to-pixel calculation unit coupled to said sample buffer, wherein said sample-to-pixel calculation unit is operable to filter a first plurality of said samples corresponding to a first frame using a first filter to generate a first set of output pixels for said first frame;

a negativity computation unit configured to:

compute a first negativity value based on said first set of output pixels, wherein said first negativity value measures an amount of negativity in said first frame; and

adjust said first filter in response to said first negativity value.

32. The graphics system of claim 31, wherein said negativity computation unit is operable to adjust said first filter in response to a magnitude of the first negative value exceeding a negativity threshold.

33. The graphics system of claim 32, wherein said negativity threshold is adjustable by a user.

34. The graphics system of claim 31 further comprising a filter memory coupled to the sample-to-pixel calculation unit and the negativity computation unit, wherein the sample-to-pixel calculation unit is configured to read filter parameters from the filter memory and generate filter weights for said first plurality of samples based on said filter parameters, wherein the negativity computation unit is configured to adjust the first filter by storing adjusted filter parameters in the filter memory.

35. The graphics system of claim 31, wherein said negativity computation unit is operable to compute the first negativity value by:

identifying negative pixels at least a subset of said first set of output pixels, wherein negative pixels are output pixels having one or more negative pixel components;

computing a pixel negativity value for each negative pixel in said at least a subset;

operating on the pixel negativity values to determine the first negativity value.

36. The graphics system of claim 35 wherein said negativity computation unit to configured to operate on the pixel negativity values by summing the pixel negativity values.

37. The graphics system of claim 35 wherein said negativity computation unit is configured to operate on the pixel negativity values by computing a statistic on the pixel negativity values.

38. The graphics system of claim 31, wherein said sample-to-pixel calculation unit is operable to:

filter a first attribute of said first plurality of samples with the first filter to generate a first component of the output pixels of the first set, wherein the first negativity value is based on the first component of the first set of output pixels;

5   filter a second attribute of said first plurality of samples with a second filter to generate a second component of the output pixels of the first set;

wherein the negativity computation unit is configured to:

compute a second negativity value based on the second component of the output pixels of the first set; and

10   adjust the second filter in response to said second negativity value.

39. The graphics system of claim 38, wherein the first attribute and second attribute are selected from the group consisting of red, green, blue, and alpha.

40. The graphics system of claim 31, wherein the sample-to-pixel calculation unit is further operable to filter a second plurality of said samples corresponding to a next 15   frame using said adjusted filter.

41. The graphics system of claim 31, wherein said negativity computation unit is operable to compute said first negativity value by:

computing pixel negativity values for output pixels of the first set having one or more negative components;

20   forming a histogram of said pixel negativity values; and

computing a statistic based on the histogram cell values.

42. The graphics system of claim 41, wherein said histogram has cell boundaries which occur at successive powers of two.

43. The graphics system of claim 41, wherein said statistic comprises a weighted average of the histogram cell values.

44. The graphics system of claim 31, wherein said negativity computation unit is operable to adjust said first filter by selecting a new filter with less negative lobe energy than said first filter.

45. The graphics system of claim 31, wherein said negativity computation unit is operable to adjust said first filter by changing parameters of the first filter within a parameterized family of filters in a direction of decreasing negative lobe energy.

46. The graphics system of claim 31, wherein said sample-to-pixel calculation unit is operable to transmit the first set of output pixels to a display device.